

Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 28, with the following rewritten paragraph:

It is preferable to use light having a wavelength of 1.55 μm for a long-distance communication system to reduce the attenuation of the light in a quartz fiber to a minimum. The grating constant of a diffraction grating of an optical fiber for transmitting light of 1.55 μm in wavelength must be about 500 nm. It is difficult to form such a fine structure in the core of an optical fiber. A Bragg diffraction grating is formed in the core of an optical fiber by a method including many complicated processes including a side polishing process, a photolithographic process, a holographic exposure process and a reactive ion-beam etching process. Thus, the production of optical fibers provided with a Bragg diffraction grating takes too much time and results in a low yield.

Please replace the paragraph beginning on page 3, line 18, with the following rewritten paragraph:

As mentioned above, the irradiation method that irradiates an optical fiber, i.e., a device for optical communication, through a phase mask to form a diffraction grating in the optical fiber needs to carry out apodization to modulate the refractive index of the optical fiber axially. The irradiation method having the two exposure steps, i.e., the exposure step using the phase mask, and the apodization functional exposure step, is troublesome and ~~the~~an improvement of yield has been desired.

Please replace the paragraph beginning on page 6, line 1, with the following rewritten paragraph:

According to a fourth aspect of the present invention, a phase mask fabricating method of fabricating a phase mask, for forming a diffraction grating in an object forming an optical medium and including a photosensitive part by exposing the object to UV light containing diffracted light rays to cause the refractive index of the photosensitive part of the object to change by interference fringes produced by interference of diffracted light rays of different orders of diffraction, comprising a transparent substrate having one surface provided with a pattern of a plurality of grooves, comprises the steps of: preparing a transparent substrate; and processing the transparent substrate by a photolithographic process including an exposure step for forming grooves, a pattern development step and an etching step; wherein the number of times of the photolithographic process is changed in order to adjust the respective depths of the grooves according to the positions of the grooves so that apodization exposure can be achieved when the object is exposed to the UV light through the phase mask.